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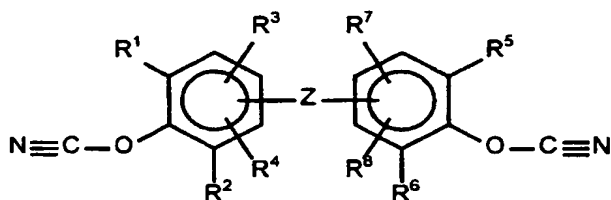
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(54) Title: OPTICAL WAVEGUIDES DERIVED FROM A COMBINATION OF POLY(PERFLUOROCYCLOBUTANES) AND POLYMERIC CYANATES



(I)

(57) Abstract: The present invention is directed to optical waveguides or waveguide systems, comprising at least (a) a first material which is a poly(perfluorocyclobutane), and in direct contact to this material, (b) a second material which is a polycyanate resin made from at least one aromatic difunctional cyanate of formula (I) wherein R¹ to R⁸ are independently from each other hydrogen, optionally substituted C₁-C₁₀ alkyl, C₃-C₈ cycloalkyl, C₁-C₁₀ alkoxy, halogen, phenyl or phenoxy, the alkyl or aryl groups

being unfluorinated, partly fluorinated or fully fluorinated, with the proviso that (I) carries at least 1 fluorine atom, and Z is a chemical bond, SO₂, CF₂ CH₂, CHF, CH(CH₃), isopropylene, hexafluoroisopropylene, n- or iso-C₁-C₁₀ alkylene which may be partly or fully fluorinated, O, NR⁹ whereby R⁹ is hydrogen or C₁-C₁₀ alkyl, N=N, CH=CH, C(O)O, CH=N, CH=N-N=CH, alkyloxyalkylene having 1 to 8 carbon atoms, S, or Si(CH₃)₂, optionally in mixture with other components. Preferably, both the first and the second materials are in the form of a thin layer, the layers directly adhered to each other. Either the waveguide can be made from the first material and at least one of the buffer layer and the cladding layer can be made from the second material, or vice versa.

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